

## #313 CRYOGENICS SAFETY

This course is designed as a stand-alone course in cryogenics safety that addresses the primary hazards and hazard controls associated with processes and phenomena in the temperature region below  $-150^{\circ}\text{C}$  ( $-238^{\circ}\text{F}$ ). OSHA, NASA, DoD, and other industry safety requirements are included as sources. The course also provides a general overview of cryogenics, covers first aid and emergency response guidelines, and addresses important design and operational safety considerations for the storage, delivery, and control of cryogens. These considerations include materials compatibility, thermal expansion, relief valve sizing, cleaning and purging guidelines, and others. The course culminates with a review of cryogenic mishaps.

**Date:**

**February 7 - 8, 2006**

**8:00 – 4:00**

**Instructor:**

**Jim Duncan**

**Location: MSFC**

**Building 4200, Room G13E**

**Target Audience:**

- Safety, Reliability, Quality, and Maintainability Professionals.
- Supervisors, Fluid System Design Engineers, and anyone working around or with cryogenic systems.

**1.2 CEU's are available for this class**

Jim Duncan, CSP, PE, employed with the Technology Group of Jacobs Sverdrup in Tullahoma, Tennessee, holds a B.S. in Mechanical Engineering from Tennessee Technological University and completed numerous graduate courses in aerospace engineering at the University of Tennessee Space Institute. He has over 23 years of experience in various facets of engineering and aerospace facility operations at multiple locations including the DOE Savannah River Plant, the Arnold Engineering Development Center, and the Goddard Space Flight Center. After several years of experience in the system safety field supporting various aerospace and automotive test facility projects, he is currently the Health & Safety Manager for the Technology Group with responsibility for safety program leadership at multiple office, operations, and construction locations. In addition to these responsibilities, he is also teaching the cryogenics safety course for the NSTC.